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July 22, 1999

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Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Deployment of Wireline Services Offering Advanced Telecommunications Capability CC Docket No. 98-147

Dear Ms. Salas:

Enclosed for filing in the above-referenced proceeding are an original and twelve copies of the Reply Comments of NorthPoint Communications, Inc.

Would you kindly date stamp the additional copy provided herewith for that purpose and return the same to the bearer. Thank you for your assistance.

Sincerely,

Ruth Milkman

Ruth M. Milkman

Enclosures

No. of Copies rec'd 0+12
List ABCDE

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Deployment of Wireline Services Offering Advanced Telecommunications Capability	)	CC Docket No. 98-147

REPLY COMMENTS OF NORTHPOINT COMMUNICATIONS, INC.

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July 22, 1999

SUMMARY

In its Comments, NorthPoint Communications, Inc. (NorthPoint) contended that the prompt implementation of a rule permitting competitive LECs access to shared lines with incumbent LEC voice services is the *sine qua non* of residential DSL competition. The record before the Commission strongly supports that proposition. Absent line sharing, the DSL price squeeze that has to date thwarted residential competition will persist, and consumers will be denied the benefits of innovation promised in the Act. Aside from the opposition from the incumbent LECs who use line sharing to deliver their own residential DSL services but exclude competitive LECs from access to shared lines, the record reflects the nearly unanimous view that line sharing will lead to substantial consumer choice and benefits. This chorus of support for line sharing comes from the states, internet service providers, equipment vendors, competitive LECs, service providers that address small and rural communities, interexchange carriers, large consumers of broadband services, and even one incumbent LEC.

In addition to demonstrating the substantial pro-consumer policies advanced by line sharing, the record demonstrates no compelling support for incumbent LEC claims that line sharing is either operationally or technically infeasible. In fact, several incumbent LECs acknowledge that whatever operational issues exist can be easily addressed. They recognize that the operational issues posited in the opening comments are addressed by NorthPoint's proposal that line sharing be implemented in a manner consistent with existing national standards, and with splitter functionality maintained by incumbent LECs.

As both state commissions and competitive LECs recognized in their comments, national pricing rules for line sharing are essential to ensure the prompt development of competition in residential services. Moreover, the pricing rules proposed by NorthPoint and other competitive LECs – that would establish the simple and equitable rule that competitive LECs pay only what incumbent LECs pay for their own access to shared lines – will also address the cost allocation concerns raised by incumbent LECs.

Finally, with respect to spectrum policy, there is general consensus among the commenting parties that the T1E1 telecommunications committee should not be vested with policy-making authority. The opposition to permitting T1E1 to usurp the Commission's role in setting spectrum policy is both broad and well-founded. T1E1 has an historical bias that tends to limit innovation in favor of sustaining the monopoly deployment of existing technologies. It has accordingly shown little respect for the Commission's principle that technologies that are "successfully deployed" or do not cause "significant degradation" should be encouraged and deployed. To the contrary, T1E1's methodologies, which incorporate "worst case" interference assumptions, will greatly undermine the benefits of competition by impeding innovation and curtailing the reach of new services.

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REPLY COMMENTS OF NORTHPOINT COMMUNICATIONS, INC.

I. LINE SHARING

A. Line Sharing Will Benefit Residential Consumers

In its Comments, NorthPoint Communications, Inc. (NorthPoint) contended that the prompt implementation of a rule permitting competitive local exchange carriers (LECs) access to shared lines with incumbent LEC plain old telephone services (POTS) is the *sine qua non* of residential digital subscriber line (DSL) competition. Because of increasing constraints on the availability of second, stand-alone loops and the high cost of provisioning data services on such loops – and the resulting DSL price squeeze – the absence of line sharing renders the delivery of competitive DSL services to consumers cost prohibitive.

The record before the Commission strongly supports the proposition that line sharing is essential to permit residential consumers a choice among DSL providers. Aside from the opposition of the incumbent LECs (who would reserve the right to do line sharing for themselves), the record reflects the nearly unanimous view that line sharing will lead to substantial consumer choice and benefit. This chorus of support for line

sharing comes from the states,[1] internet service providers and equipment vendors,[2] competitive LECs that are poised to address this market,[3] service providers that address small and rural communities,[4] interexchange carriers,[5] large consumers of broadband services,[6] and even one incumbent LEC.[7]

The commenters in favor of line sharing agree that consumers are better served by a multiplicity of providers who compete on terms of price, innovation, and quality of

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[1] *See* Comments of the State of California and the Public Utilities Commission of California at 5 (competitive LECs must have access to shared lines to equalize the economies of scale enjoyed by Pacific Bell); Comments of Oklahoma Corporation Commission at 14, 20 ("Line sharing allows the customer a real choice between incumbent LEC and competitive LEC providers by equalizing the price each can offer for the advanced service," and "mandated sharing of the local loop and rules and standards under which sharing can be accomplished will become a virtual necessity in the near future if a competitive market is to be achieved.").

[2] *See* Comments of Commercial Internet Exchange Association at 3 (absence of line sharing may eliminate small ISPs from opportunities to serve residential market); Comments of Nortel Networks Inc. at 9 (strongly supports line sharing).

[3] Comments of Rhythms NetConnections Inc.; Comments of Covad Communications Co.; Comments of NorthPoint *passim*.

[4] *See* Comments of Inline Connections Corp. at 1; Comments of @Link Networks at 5-6.

[5] Comments of MCI WorldCom, Inc. at 11 (absent line sharing, competitive LECs' ability to serve residential users would be "severely limited."); *but see* Comments of AT&T Corp. at 17 *et seq*. AT&T has withheld support for line sharing. AT&T's comments are addressed in the operational discussion below.

[6] Comments of General Services Administration (on behalf of United States Agencies) at 7.

[7] Comments of Sprint Corp. at 8 (having formerly opposed line sharing, Sprint now states that line sharing is essential to combat the inherent LEC advantage in offering DSL to residential users).

service. Commenters that oppose line sharing are essentially arguing that incumbents should be protected from the inconvenience of implementing two-carrier line sharing.

The decision to require line sharing flows from the decision of the Telecommunications Act of 1996 (1996 Act) to reward consumers with the benefits of a fully competitive market by permitting competitive LECs access to network infrastructure. Rather than placing all the telecommunications eggs in the monopoly basket, Congress determined that allowing market forces to drive advances in technology, service and innovation is more likely to ensure that consumers are offered the best in telecommunications and advanced services in the 21st century. The 1996 Act eschewed the model that depends upon a few, closed, vertically integrated firms to bring change as they see fit for the more robust, energetic (and sometimes chaotic) model that permits all comers to offer their expertise, innovation and services to serve consumer welfare.

Recent economic and industrial history in the United States demonstrates that Congress and the Commission have chosen wisely. In the computer industry, closed and vertically integrated industry models that provided one-stop-shopping and "planned innovation" failed to serve the public need. Today Apple, Dell, Intel, Microsoft, Sun, Oracle, Hewlett-Packard, America Online, Novell, Compaq, Cisco, Lucent, and thousands of other firms bring innovation and investment to market at a pace so impressive that it is the benchmark for innovation.

Implementing line sharing will ensure that a multiplicity of competitors, including competitors that do not share the incumbent LECs' integrated business models, can address the needs of residential and rural markets for broadband DSL. To those

incumbent LEC commenters that do not intend to serve residential users outside of their monopoly footprints, line sharing may well appear to be unnecessary.[8] But the 1996 Act calls for the provision of advanced telecommunications capability to all Americans.[9] The incumbent LECs' opposition to line sharing as a means of promoting the welfare of residential consumers harkens to a day that has passed.

B. Incumbent Policy Arguments In Opposition to Line Sharing Are Misplaced

Only the incumbent LECs, including those that have reserved the efficiencies of line sharing for themselves in their own deployment of DSL services to consumers, contend that line sharing is bad policy.[10] The incumbents advance four bases for opposing line sharing: first, that DSL competitive LECs have enjoyed success in the business market, and that facilitating DSL competition in the residential market is simply unnecessary; second, that DSL competitive LECs can share lines with another competitive LEC's voice services; third, that permitting DSL competitive LECs access to residential users on shared lines will slow investment in advanced services; and fourth,

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[8] *See* Comments of GTE at 20.

[9] Pub. Law No. 104-104, Title VII, § 706, Feb. 8, 1996.

[10] *See* Comments of BellSouth, Ameritech, Bell Atlantic, GTE, Rural Telephone Coalition, SBC Corp., United States Telephone Association (USTA), and U S West. As we discuss below, AT&T's tentative opposition to line sharing is based solely upon "operational issues" related to a misunderstanding of the manner in which line sharing would be implemented.

that permitting DSL competitive LECs access to shared lines at total element long run incremental cost (TELRIC) prices will "skew" market incentives and harm competition.[11]

None of these arguments has merit.

1. Line Sharing will Permit Residential Consumers to Enjoy the Same Benefits of Choice and Competition Afforded to Small Businesses.

A number of incumbents that oppose line sharing point out that DSL competitive LECs like NorthPoint already are enjoying success in providing DSL broadband services in the business market *without* line sharing. This, they contend, is evidence that (1) line sharing is unnecessary to promote competition in the residential market,[12] or (2) facilitating competition from competitive LECs in that market is inappropriate because DSL competitive LEC success shows that incumbents have no market power in the advanced services market.[13]

Both arguments miss the mark.

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[11] One argument raised by USTA is so bizarre as to defy response. Quoting from Comments filed by SBC in the Commission's UNE remand proceeding, USTA argues that competitive LECs offering DSL services on unbundled loops have enjoyed such a warm reception from consumers and consequent commercial success that, not only should these competitive LECs be denied access to residential users on shared lines, but that access to unbundled loops themselves should be withdrawn. *See* Comments of USTA at 3-4. This argument, which would have the Commission acknowledge its successful loop unbundling rules by withdrawing them, is sufficiently addressed by the comments on loop unbundling in the UNE remand proceeding. *See Second Further Notice of Proposed Rulemaking* in CC Docket No. 96-98, FCC 99-70 (released April 16, 1999).

[12] *See* Comments of Ameritech at 3 (success of DSL competitive LECs shows they do not need line sharing to succeed); Comments of GTE at 20; Comments of SBC at 14-15; Comments of U S West at 23.

[13] *See* Comments of BellSouth at 12; Comments of Bell Atlantic at 6.

Line sharing is essential to permit *residential* consumers to benefit from competition in the provision of broadband DSL services. As NorthPoint and other commenters pointed out, the DSL price squeeze is most acute when attempting to serve residential consumers.[14] It is an uncontested fact that the cost of the wholesale inputs to competitive LECs – collocation and loops – generally exceeds the $40 retail price of residential DSL. Any attempt by competitive LECs to serve this market will, without relief from this DSL price squeeze, be marked by failure. Line sharing, which puts competitive LECs on the same footing as the incumbent LECs and permits all parties to use existing loop plant efficiently, will resolve the price squeeze and permit consumer competition in the broadband DSL market.

The success of the DSL competitive LECs like NorthPoint in the small business market does not translate to the residential market where the DSL price squeeze is so problematic. Specifically, the DSL price squeeze attributable to the incumbent LEC's use of shared lines and the exclusion of competitive LECs from shared lines is absent in the small business market. Because robust business-class DSL services, like SDSL, are not amenable to provisioning on shared-lines, incumbents that might deploy such services would enjoy no unfair advantage by excluding competitive LECs from shared lines. ADSL – which is well-suited for consumers and can be delivered on shared lines – is not typically offered to business users by the incumbents. Consequently, where the incumbent enjoys no unfair advantage by its ability to exclude competitors from

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[14] Comments of NorthPoint at 6-10.

efficiencies like line sharing, and where there are no artificial cost disadvantages placed on competitive LEC services, competitive LECs have enjoyed great success. This success suggests that extending the principle of nondiscrimination to residential users by permitting competitive carriers access to shared lines just like the access enjoyed by incumbents will afford residential consumers the same benefits from competition that have been afforded business users.

Finally, line sharing has nothing to do with incumbent LEC dominance or non-dominance in the advanced services market and everything to do with its monopoly control of loop infrastructure. DSL competitive LECs do not want access to resale or unbundling of incumbent LEC digital subscriber line access multiplexers (DSLAMs) or packet switches.[15] Indeed, NorthPoint was an early proponent of the separate subsidiary measure that would in most circumstances permit incumbent LECs to deploy advanced services free of the unbundling and resale obligations of sections 251.[16] Rather, line sharing requires incumbent LECs to provide shared loop access so that competitive LECs can deploy their own advanced services equipment to provide broadband services in *competition* with competitive LECs like NorthPoint.

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[15] NorthPoint has stated that an incumbent LEC must be required to unbundle DSLAMs or other DSL technology only where it retains a monopoly on consumer access – such as through Digital Loop Carriers or other remote devices.

[16] Comments of NorthPoint, *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket No. 98-147 (released September 25, 1998).

2. Forcing DSL Competitive LECs to Bundle DSL with POTS Service Will Slow Competition In Broadband Services to Residential Consumers

A number of incumbent LECs argue that DSL competitive LECs should not be permitted to access shared lines but, rather, should simply emulate the incumbent LEC integrated voice/DSL service offering by building or buying their own voice services. Although this claim has superficial appeal, it is a transparent attempt to maintain the incumbent LECs' monopoly in residential services. As NorthPoint demonstrated in its Comments, forcing DSL competitive LECs to "tie" voice services to their DSL offerings is nothing more than a ploy to slow or to stop the delivery of competitive services *of any kind* to the residential market. Requiring DSL competitive LECs to offer voice service – either on their own or by partnering with other competitive LECs – creates substantial barriers to entry and substantial disincentives to consumers to exercise choice among DSL providers.[17] First, because NorthPoint is far more widely collocated than any voice competitive LEC, particularly in rural and residential areas, there is actually *no* competitive LEC with which NorthPoint can partner to provide voice service.[18] Second, even if there were a competitive LEC with whom NorthPoint could provide integrated voice and data services, forcing customers to change voice carriers as a condition of their choosing competitive DSL is a choice "penalty" that only serves to limit consumer

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[17] *See* Comments of NorthPoint at 13-15.

[18] NorthPoint announced on July 21, 1999, that it has secured more than 1,000 collocation spaces nationwide. NorthPoint press release, July 21, 1999.

benefits. It is, moreover, a particularly pernicious "penalty" when the advocates of such a policy hold nearly 100% share in the residential markets they serve.[19]

3. Line Sharing Will Encourage Investment By Competitive And Incumbent LECs

Just as permitting access to unbundled loops gave NorthPoint the ability to serve small businesses – and resulted in hundreds of millions of dollars of investment by NorthPoint alone – permitting NorthPoint and other competitive LECs access to the residential market through line sharing will spur a flurry of additional investment in that market.

Some incumbent LECs have contended that permitting competitive LECs access to shared lines will curtail investment in advanced technologies. But these arguments defy experience. History demonstrates that permitting new entrants to address underserved markets increases, rather than diminishes, investment and innovation. The FCC has observed that "[i]nnovations arrive sooner when many, rather than few, firms enter. Therefore, consumer welfare will be increased by more entry into the market for broadband facilities and services."[20] For example, the ability of competitive interexchange carriers to interconnect to provide long distance services resulted in the

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[19] *See* Comments of NorthPoint at 13-15 (providing six reasons that requiring a combined voice and data product would defeat residential DSL).

[20] *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans*, CC Docket 98-146, FCC 99-5, at ¶ 52 (released January 28, 1999).

ubiquitous deployment of fiber-optic technology in the United States and the relentless reduction in long-distance prices. Meanwhile, monopoly control over the "last mile" had, until 1996, resulted in nothing more than the persistent hum of uninspired dialtone, the advent of only several "features" like call waiting priced hundreds (or thousands) of times above their incremental cost, and consumer prices that inched steadily upward on an inflationary index. The incumbent contention that expanding competitive access to the consumer market through line sharing will somehow retard investment is not consistent with past experience.

Some incumbents level threats that permitting competition on shared lines will cause the incumbent LECs to withhold investment in their own deployment of advanced services.[21] These arguments rest on one of two false premises: (1) that absent exclusive access to residential markets and the supra-competitive returns that only monopolies can enjoy, further investment would be uneconomic; or (2), that investment in new technologies such as DSLAMs and splitterless DSL cannot be justified if the Commission grants competitive LECs a "free ride" after those investments are made. The first premise is inconsistent with the Act; the second reflects a misunderstanding of line sharing.

First, incumbent LECs cannot be granted a monopoly in residential DSL service to encourage them to make (or sustain) investment in voice or advanced wireline

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[21] *See, e.g.*, Comments of BellSouth at 14; Comments of GTE at 26; Comments of SBC at 19-20; Comments of UTSA at 4.

services. GTE and Bell Atlantic contend, for example, that absent supra-competitive profits in the residential broadband market, they will be "saddled" with the provision of POTS services.[22] Given that line sharing would not preclude incumbents from providing residential DSL, but would require incumbents to compete to offer such services (on terms of price, service and quality), this suggests that incumbent LEC opposition to line sharing is founded upon a desire to exclude such competition to exact supra-competitive profits. This desire is inconsistent with the Communications Act and with the nation's laws on antitrust.[23] Indeed, attempts to secure one monopoly by "tying" it to adjacent services are illegal.[24] Consequently, monopolists' claims that public policy should shield the incumbent LECs from competition in order to ensure the higher returns that they seek to justify investment cannot be sustained.

Second, line sharing does not diminish incumbent LEC incentives to invest in advanced technologies.[25] These arguments are based on a misconception of line sharing. Line sharing is about loop access. NorthPoint wants access to shared loops in order to deploy its *own* investment. Indeed, rather than seeking access to BellSouth's or other

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[22] Comments of GTE at 26; Comments of Bell Atlantic at 3 (line sharing "will deny the incumbent the ability to recover the full cost of the line by selling a package of services to the customer, but would affirmatively deter other carriers from providing voice services").

[23] *Eastman Kodak v. Image Technical Servs. Inc.*, 509 U.S. 451, 462 (1992).

[24] In general, tying arrangements that limit consumer choice without demonstrable pro-consumer benefits are illegal *per se* under the Sherman Act. *Jefferson Parish Hospital v. Hyde,* 466 U.S. 2, 9 (1984).

[25] *See* Comments of BellSouth at 14; Comments of Rural Telephone Coalition at 4-5; Comments of Bell Atlantic at 3.

carriers' investment in DSLAMs and packet technology, NorthPoint seeks equal access to shared loops in order to invest and install DSLAMs and to provide innovative broadband DSL services – all of which are entirely consistent with the standards-based line sharing proposal advanced by NorthPoint. Moreover, to the extent that the incumbent LECs implement line sharing and other loop and collocation practices that permit competitive LECs access to end users, NorthPoint would support *relieving* the incumbent of its obligation to unbundle or resell such services. Thus, line sharing might be said to stimulate investment by permitting incumbents greater regulatory freedom for the deployment of their own services.

Some incumbent LECs contend that permitting competitive LECs to access shared loops will diminish investment in loop technology. But as pointed out below in Section I.C.2, these contentions ring hollow. The public investment in the installed loop plant is substantial and the determination by Congress to free these publicly funded, bottleneck facilities from monopoly control is the root of the 1996 Act. To question again the right of competitive LECs to access this infrastructure to deliver innovative and advanced services is to question the very principle of competition in the telecommunications marketplace.

4. TELRIC Pricing Promotes Competition

Dr. Crandall argues on behalf of Bell Atlantic that if incumbent local exchange carriers are required to share their lines with competitive LECs at TELRIC prices, these

entrants will have far less incentive to deploy alternative technologies.[26] The argument that TELRIC pricing reduces incentives to invest was debated at length in the course of the Commission's *Local Competition* proceeding. The Commission concluded that new entrants' investment decisions would be distorted if the price of unbundled elements were based on embedded costs, rather than forward-looking economic costs.[27] The argument made by Bell Atlantic and Dr. Crandall regarding TELRIC pricing for unbundled network elements is one that incumbent LECs have made repeatedly without success. The Commission has properly concluded that the prices that potential entrants pay for unbundled network elements should reflect forward-looking economic costs in order to encourage efficient levels of investment and entry.[28] Moreover, the billions of dollars of investment made by competitive LECs in the three years following the 1996 Act and the Commission's *Local Competition* decision confirm the wisdom of the Commission's decision.

C. Incumbent Technical or Operational "Issues" Are Red Herrings Insufficient to Defeat Consumer Benefits of Line Sharing

At least some opponents of line sharing concede that whatever operational issues may exist can be "overcome."[29] Indeed, NorthPoint's proposal that line sharing be

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[26] Comments of Bell Atlantic, Affidavit of Dr. Crandall at ¶ 5.

[27] *Local Competition First Report and Order*, at ¶ 620.

[28] *Id.* at ¶ 673.

[29] Comments of GTE at 30; Comments of SBC Communications at 26-28.

performed in a manner consistent with existing national standards, and with splitter functionality maintained by the incumbent, would solve almost all of the operational issues raised by commenters. DSL line sharing along the lines of the ANSI T1.413 standard – the approach used by incumbents – does not implicate the concerns raised by commenters with respect to "trumping" high-frequency services,[30] DSL interfering with voice circuits, impairing privacy, or slowing the deployment of G.Lite. Even AT&T's comments urge the Commission to adopt policies that ensure efficient loop utilization[31] – a goal that is better achieved by requiring line sharing than by foregoing it. Other "operational" issues, such as line conditioning[32] or addressing customer service issues between two carriers,[33] are indistinguishable from hurdles already overcome by the incumbent LECs in their own provision of shared line DSL services or the provision of unbundled loops. Remaining issues, such as facilitating carrier changes, ensuring the ability of carriers to test lines and modifications to OSS, can be addressed by the institution of certain line sharing guidelines, many of which already have been solved by proposals in NorthPoint's original comments relating to the configuration of two-carrier line sharing.[34]

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[30] Comments of Bell Atlantic at 10-11.

[31] Comments of AT&T at 20.

[32] Comments of SBC at 41.

[33] Comments of Bell Atlantic at 11-12; Statement of Dr. Charles L. Jackson at ¶ 10.

[34] *See also* Comments of SBC at 26-28 (proposing a number of guidelines to limit operational issues in line sharing).

While reviewing the incumbent LECs' claims that "two-carrier" line sharing is operationally infeasible, it is important to note that at least two of the carriers, Ameritech and SBC, are apparently unconcerned by these issues. These two carriers have agreed that upon approval of their proposed merger, they will offer advanced services, including DSL, through a separate subsidiary. When this separate subsidiary offers DSL by sharing the end user's voice loop with the SBC/Ameritech incumbent, SBC and Ameritech will have implemented two-carrier line sharing. If SBC and Ameritech are sufficiently confident that two-carrier line sharing will work to have bet their merger on it, then the "operational issues" raised by the incumbents must be viewed with skepticism. In short, the few genuine operational issues raised in the comments suggest that that line sharing should be swiftly implemented with a few clear rules to guarantee its success.

1. Most "Operational" Issues Concern an Implementation of Line Sharing That is Not Proposed

Many carriers raise concerns about line sharing configurations not at issue in this proceeding. In its Comments, NorthPoint urges implementation of line sharing based on the configuration in the ANSI T1.413 ADSL standard.[35] As discussed in NorthPoint's Comments, this standard uses separate frequencies to carry voice and data on the same

[35] Comments of NorthPoint at 16.

loop.[36] SBC, in fact, suggests the same configuration: limit shared lines to ADSL technology using the loop frequency above the 4 Khz loop spectrum.[37]

Several commenters discuss line-sharing arrangements where the competitive LEC deploys SDSL, HDSL, or other "unknown" technologies, instead of ADSL, on the data portion of the loop.[38] Because NorthPoint proposes line sharing using the high frequency spectrum in the ANSI ADSL standard, *none* of these concerns is implicated. Bell Atlantic suggests that if a competitive LEC is given shared access to a loop on which ISDN is already provided, the provision of DSL will impair the ISDN service and the customer would not be able to make voice and data calls.[39] Under NorthPoint's line sharing proposal, line sharing would not be possible on a loop on which ISDN is provided.[40] Finally, SBC discusses problems with offering line sharing on long loops, loops with load coils or loops that have other electronics.[41] To the extent that ADSL

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[36] The voice traffic will use the frequency below 4 Khz and the data traffic will be above 4 Khz. *See* Comments of NorthPoint at 16. Ameritech suggests that industry standards are only now being developed for a shared voice and data product. Comments of Ameritech at 9. While industry standards are constantly evolving for new technologies, the existing T1E1.413 accounts for a shared voice and data product. *See also* Comments of Association for Local Telecommunications Services (ALTS) at 9, Covad Communications at 5-6.

[37] Comments of SBC at 26.

[38] Comments of GTE at 29; Comments of SBC at 25; Comments of U S West at 14; Comments of Bell Atlantic at 11; Comments of USTA at 23; Comments of Ameritech at 10, 12.

[39] Comments of Bell Atlantic at 10-11.

[40] Comments of Ameritech at 10.

[41] Comments of SBC at 25.

cannot be provided on these loops, line sharing would not be available to either the incumbent LEC or the competitive LEC.

Several commenters raise concerns about line sharing that *could* be implicated if the competitive LEC maintained control over the loop and splitter in a shared line arrangement.[42] SBC, for example, speculates that if the end user stops paying its competitive LEC data services bill in a shared-line scenario, the competitive LEC might take its splitter and disconnect the customer without regard for the end user's voice service.[43] SBC also raises concerns regarding the privacy of an end user's voice communications when the end user's loop goes through a competitive LEC DSLAM, thereby allowing the competitive LEC to "intercept" the voice portion of the loop spectrum.[44] U S West posits that the *only* way to deploy line sharing is the configuration in which the competitive LEC splits the voice and data in its collocation cage and "hands back" the voice to the incumbent LEC.[45] Using this false premise, U S West proceeds with a "parade of horribles."[46]

All of these concerns were anticipated and addressed by NorthPoint's proposal for line sharing that allows the incumbent LEC to maintain control over the loops and the

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[42] Comments of SBC at 22, 27; Comments of U S West at 13; Comments of BellSouth at 18; Comments of AT&T at 18.

[43] Comments of SBC at 24.

[44] Comments of SBC at 22;

[45] Comments of U S West at 13-14. *See also* Comments of BellSouth at 18.

[46] Comments of U S West at 14-16.

splitter functionality.[47] Like NorthPoint, SBC suggests that many operational "issues" can be taken off the table by permitting the incumbent LEC to provide and manage the filtering/splitting equipment.[48] The passive splitter called for in the ADSL standard directs the voice and data traffic to the appropriate transmission equipment and is available from an array of international vendors.[49] Cisco has published installation instructions for its POTS splitter chassis – with diagrams and specifications – that anticipates installation in a manner advocated by NorthPoint.[50] These splitters would be located on (or adjacent to) the main distribution frame in an incumbent central office, thereby allowing the incumbent to maintain control over the loop and splitter functionalities.

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[47] Comments of NorthPoint at 22. *See also* Comments of Sprint at 12.

[48] Comments of SBC at 27. This proposal also addresses AT&T's concerns regarding responsibility for deployment and maintenance of the splitter. Comments of AT&T at 18.

[49] SBC and BellSouth suggest that use of a stand-alone splitter is more complicated and costly than the technology they apparently use, which is a voice filter housed in the incumbent DSLAM. Comments of SBC at 22; Comments of BellSouth at 19. As discussed above, stand-alone splitters with "low pass filters" for data and "high pass filters" for voice are part of the T1E1 specification for a shared voice and data product and are developed and sold by many vendors such as Newbridge, Cisco, Seicor, Fujitsu and Willcom.

[50] See http://www.cisco.com/univercd/cc/td/doc/product/dsl_prod/6200/copots.htm. The example given by Cisco for its suggested deployment is identical to that proposed by NorthPoint in its Comments at Attachment 2.

2. Several "Operational" Issues Relate to Competition or to Advanced Services, But Have Nothing To Do with Line Sharing

Several commenters state their concerns in line sharing rhetoric, but their concerns do not relate to line sharing at all. These commenters claim that line sharing will interfere with an end user's voice service or that line sharing will impair an incumbent's ability to upgrade its loop plant from copper to fiber, to rearrange its loop plant, or to deploy newer DSL services.[51] None of these concerns relate to or are exacerbated by line sharing.

Bell Atlantic claims that it would encounter "howls of resistance" from competitive LECs offering services over shared lines if it wanted to upgrade its loop plant from copper to fiber.[52] Bell Atlantic's claim is misplaced because an incumbent's unfettered ability to change or rearrange its loop plant is already restricted by the broader ability of competitive LECs to lease individual unbundled loops and would not be exacerbated by requiring line sharing. Bell Atlantic's claim is also overstated. When an incumbent LEC upgrades its loop plant from copper to fiber, the incumbent LEC rarely, if ever, removes the existing copper, but instead lays the fiber along the existing copper routes. This practice means Bell Atlantic can upgrade its plant by laying fiber, but competitive LECs will be able to keep the copper loops, including line-shared loops, they

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[51] Comments of SBC at 24, 27; Comments of Ameritech at 10; Comments of BellSouth 18-19; Comments of Bell Atlantic at 5 and Jackson Statement at ¶ 13; Comments of U S West at 14-15; Comments of USTA at 21-24; Comments of AT&T at 18.

[52] Comments of Bell Atlantic at 5. *See also* Comments of Ameritech at 7.

are currently leasing from Bell Atlantic to offer DSL services to end users.[53] Finally, the very nature of Bell Atlantic's own DSL service will also limit its ability to rearrange or replace its loop plant due to the adverse effects on its own retail DSL services.

Incumbent LECs also express concerns about the effect on voice services of making a copper loop "DSL capable" by removing certain electronics originally designed to enhance voice service.[54] NorthPoint anticipated these concerns in its opening Comments and proposed that if loop conditioning for DSL would degrade voice service on a particular loop then that loop should not be used to support a shared voice and data product.[55] This "voice first" rule ensures the integrity of lifeline voice services.

To ensure that the incumbent LEC will not abuse the "voice first" rule by arbitrarily determining that competitive LEC DSL service will degrade incumbent voice services, NorthPoint also suggested in its Comments that an incumbent must make an affirmative showing to a state commission of interference with the voice service.[56] If an incumbent LEC asserts that a loop cannot be used to offer shared voice and DSL service, and proves such incompatibility to the state commission, that end user cannot receive *any*

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[53] The argument by the Rural Telephone Coalition that line sharing will imperil upgrades to DLCs in rural areas similarly misses the mark. *See* Comments of Rural Telephone Coalition at 5-6. NorthPoint's Comments suggested that line sharing only be permitted on copper loops on which an incumbent provides POTS. Digital transmission technologies that preclude the provision of shared line ADSL by both incumbents and competitors are not affected.

[54] *See, e.g.*, Comments of Ameritech at 12; Comments of SBC at 27.

[55] Comments of NorthPoint Communications at 20.

[56] *Id. See also* Comments of the Oklahoma Corporation Commission at 15 (incumbent must "be held to specific set of standards in demonstrating its case").

shared voice and DSL service, from the competitive LEC or the incumbent. NorthPoint believes it will be rare for the incumbent to prove such incompatibility. But the mere claim by the incumbent will slow the provisioning process. As such the incumbent must be held to a strict burden of proof and penalties if it abuses the process.

Second, some incumbent LECs state concerns about interference between the voice and data services offered on the same loop. U S West suggests that this potential interference could have life threatening results by interfering with 911 and creating "havoc" on the public switched telephone network.[57] These concerns are addressed by the ANSI ADSL standard, which prevents interference by reserving a "guardband" range of the spectrum (between 4 Khz and 24 Khz) to prevent accidental "bleed" between the two services.[58] SBC supports line sharing with such a guardband.[59] This issue is also not specific to *two-carrier* line sharing because any shared voice and data product will have to use the guardband technology.[60]

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[57] Comments of US West at 14-15 (line sharing that portends interference with POTS services may deny consumers access to emergency services and contribute to the "havoc" that would attend the incumbent LECs' loss of control over the last mile).

[58] *See* ANSI ADSL Standard T1.413 at ¶¶ 6.14.2 and 7.14.2 ("Low Frequency Stop Band Rejection"). *See also* Comments of SBC at 27 and Comments of BellSouth at 20 (both comments suggesting that the guardband technology would resolve any spectrum interference issues).

[59] Comments of SBC at 27.

[60] If an incumbent claims that a loop is incapable of supporting a shared voice and data product because of interference between the two services, then it should be subject to the same burden of proof and showing before the state commission under the same rules as discussed immediately above for loop conditioning.

3. The Remaining "Operational" Issues Are Readily and Quickly Surmountable to Ensure Prompt Delivery of Line Sharing's Benefits to Consumers

a) The Possibilities of Offering Voice Over Data Services Enhances the Value of Line Sharing

There is no sound policy reason to preclude the provision of voice applications on the data spectrum of a shared line. There are two ways to provide voice services to end users on shared lines. First, there is the traditional POTS lifeline service provided on the low-frequency analog spectrum from 0-4 Khz. Second, there is the potential to offer digital, "packetized" voice services that ride as undifferentiated bits on the digital services offered on the higher frequency data spectrum. Line sharing contemplates that the incumbent LEC continue to provide POTS lifeline services on the lower frequencies while the consumer choose the provider for data services on the higher frequencies. No proponent of line sharing proposes to deliver voice services on the POTS spectrum or to supplant the incumbent LECs' voice offerings on a shared line.

Nevertheless, USTA suggests that allowing competitive LECs to offer voice applications over the data spectrum of a shared loop "turns the intent [of line sharing] on its head."[61] This is nonsense. If the intent of line sharing is to allow residential consumers *increased* competitive choices for data services, then voice over data – just

[61] Comments of USTA at 25.

like e-mail and other broadband applications – is the type of innovative service that competition should foster. [62]

Indeed, permitting innovation in development of voice over data applications will also create opportunities to more efficiently utilize scarce copper loop plant. With voice over data, a wide variety of end user services can be provisioned using a single copper loop, thereby eliminating some of the demand for second and third copper lines to the home or business. In this way, for example, a customer might retain his or her POTS lifeline service from the incumbent in the analog low-frequency spectrum, but exploit the opportunities provided by broadband to enjoy computer telephony, videoconferencing, or voice quality applications on the digital platform offered on the higher frequencies. SBC recognizes the advantage of such innovative services and states that "packetized voice" offered on the higher data frequencies "could reduce the demand on the copper plant while continuing the use of today's circuit switched network."[63]

Despite the benefits to consumers, several carriers suggest that voice over Internet Protocol (IP) or voice over data services will render line sharing useless and thus the FCC should not "waste its time" or the incumbent LECs' resources by requiring them to

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[62] It is important to note that none of the commenters suggested that voice over data services were technically infeasible with a shared lifeline and data product. SBC suggests, and NorthPoint agrees, that voice over IP (Internet Protocol) and voice over ATM switches should be considered data and offered in the 25 Khz and above range on the loop. Comments of SBC at 28.

[63] Comments of SBC at 18.

implement line sharing.[64] These carriers have missed a step in the analysis. Competitive carriers on the cutting edge are only now beginning to conduct technical and market trials for voice over DSL.[65] This technology is still experimental. Suggestions that VoDSL (voice-over-DSL) is a serviceable substitute for line sharing are misplaced.

b) Line Sharing Will Not Impair Consumers' Ability to Choose Competitive LEC Voice Services

Some commenters, apparently unfamiliar with the ANSI standard for ADSL line sharing, appear to believe that line sharing will somehow stymie the ability of competitive LECs or incumbent LECs to offer consumers services using the whole loop. Both NEXTLINK and AT&T erroneously state that line sharing may prevent competitive LECs from offering innovative new services by relegating them to certain spectrum portions of the loop.[66] These concerns are misplaced. Line sharing is consistent with the Commission's decision in the *Local Competition First Report and Order* to give competitive LECs exclusive use of unbundled loops. The 1996 Act imposes unbundling requirements on incumbent LECs, not competitive LECs. Therefore, in response to concerns raised by NEXTLINK, for example, it is NorthPoint's view that a competitive LEC cannot be forced to give up a portion of an unbundled loop if it *wants* exclusive

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[64] Comments of SBC at 19-12, 26; Comments of Ameritech at 5; Comments of GTE at 24.

[65] Comments of Prism Communication Services, Inc. at 15.

[66] Comments of NEXTLINK at 9; Comments of AT&T at 19.

access to that loop.[67] An end user with a two-carrier shared line service could choose a different competitive LEC to replace an existing incumbent and competitor that are sharing the loop.[68] If a competitive LEC competes for an end user by offering new and innovative services and wins that customer, then the competitive LEC has exclusive use of the loop to offer any service to meet its customer's needs. This is how competition works: the *end user* decides what services and what service providers it wants. However, to make that decision meaningful, that end user must have access to a full range of competitive LEC and incumbent LEC voice and data services. Line sharing enhances those competitive choices.

c) Maintenance, Repair and Testing Will Be Coordinated Through Mutual Methods and Procedures

A common theme throughout the incumbent LECs' comments is that the responsibility for maintenance, repair and testing will be "unclear" in a shared line

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[67] Comments of NEXTLINK at 9.

[68] A form of "voluntary" line sharing can exist between a data competitive LEC and a voice competitive LEC over a single unbundled loop if the two carriers enter into a business arrangement outlining the responsibilities of each carrier. Interestingly, while AT&T and U S West both suggest that "mandatory" line sharing is infeasible, both admit operational issues are easily surmountable in a "voluntary" line sharing arranement. AT&T supports "voluntary" line sharing. Comments of AT&T at 17-18; Comments of U S West at 24.

environment.[69] All of these concerns are addressed by the development of methods and procedures for the provisioning and ongoing support for shared line services. Indeed, many of the issues raised by the incumbents are already being handled pursuant to methods and procedures for the ordering and provisioning of unbundled network elements.[70] Additionally, SBC and Ameritech, through their separate subsidiary proposal, are demonstrating how cooperative business planning can bring efficient customer service to end users – even to shared line services with third parties, be they separate affiliates or unaffiliated competitive LECs. [71]

Bell Atlantic raises concerns over the alleged complications in "cross-firm testing" of DSL and voice services and possible "finger-pointing" between the incumbent LEC and competitive LEC for trouble resolution and the capabilities of its equipment.[72]

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[69] Comments of U S West at 15-16; Comments of AT&T at 16; Comments of Bell Atlantic at 11;Comments of Bell South at 24; Comments of Ameritech at 11. Interestingly, both AT&T and U S West raise operational concerns with "mandatory" spectrum unbundling because two carriers are involved in operation of the same loop, but accede that "voluntary" spectrum unbundling, also involving two carriers on the same loop, does not raise the same issues and is technically feasible. Comments of AT&T at 17-18; Comments of U S West at 24.

[70] Each incumbent LEC has M&Ps (methods and procedures) for the joint resolution of trouble and testing issues with competitive LECs. These M&Ps are extensive and could easily include provisions for escalating shared line trouble issues in a manner that minimizes customer confusion.

[71] *See* Letter of Richard Hetke, Ameritech, and Paul Mancini, SBC, to Magalie Roman Salas, FCC Secretary, Attachment at ¶¶ 33-34, CC Docket No. 98-141 (filed July 1, 1999) (proposing condition in support of SBC/Ameritech merger that would require the provisioning of line sharing to competitive advanced services providers) ("SBC/Ameritech Proposed Merger Conditions in CC Docket No. 98-141").

[72] Comments of Bell Atlantic at 12, and Jackson Statement at ¶¶ 10-12, 15.

To support its "operational" confusion claim, Bell Atlantic's affiant Dr. Jackson offers a complicated and unrealistic scenario involving two divisions of the same business, two carriers, miscommunication among end-user employees, and general incompetence to try to demonstrate evils of two-carrier line sharing. NorthPoint believes Dr. Jackson's scenario is easily remedied through standard business practices that will facilitate communication between the two service providers sharing a loop. In addition, Dr. Jackson assumes that neither of the two carriers will accept the responsibility for coordinating the interaction of the two services to speed resolution to this business customer. In today's competitive environment, where customer expectations are high, business rules must be and are being developed to avoid consumer problems. NorthPoint has proposed in other fora that incumbent LECs and competitive LECs establish methods and procedures for "warm transfers" of customer service calls, similar to those the incumbent LECs have established in order to provide wholesale shared line DSL to providers such as America Online.

Bell Atlantic also states that it would not be able to use its own equipment to test a competitive LEC's DSL product, which will make Bell Atlantic's ability to test and repair those competitors' DSL services "more difficult."[73] But Bell Atlantic would never test NorthPoint's DSL; NorthPoint will retain the capability and incentive to ensure that its *own* services perform at maximum levels without incumbent LEC assistance.

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[73] Comments of Bell Atlantic, Jackson Statement at ¶ 12.

Several carriers raise concerns about the ability to distinguish between voice and data services for purposes both of testing service and assigning responsibility for maintenance and repair. The incumbent LECs, however, are comfortable creating such divisions of responsibility for their own wholesale DSL offerings. Bell Atlantic's federal tariff for Infospeed DSL states that

> "the customer [ISP] will deal directly with its end users and will be *solely liable* with respect to all matters relating to the service, including marketing, ordering, *installation, maintenance, repair*, billing and collections; and the customer will not direct its end users to contact the Company regarding any aspect of the service."[74]

This business rule between Bell Atlantic and its ISP partners can also be applied to the business relationship between Bell Atlantic and competitive LECs.[75] For example, NorthPoint recognizes the business realities and maintenance requirements of the local loop plant and will accept standard business practices that allow for reasonable line testing, even if that testing and repair may have a temporary impact on NorthPoint's shared-line DSL service.[76] These types of operational issues are relatively minor and can

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[74] Bell Atlantic Tariff F.C.C. No. 1, Section 16.8(F)4.(a).

[75] Bell Atlantic's ability to maintain a bright line distinction between the voice and data service in its "wholesale" DSL tariff calls into question BellSouth's claim that its testing equipment and maintenance systems cannot distinguish "data from POTS over a single copper pair." Comments of BellSouth at 23-24. BellSouth must develop this capability to meet its own customer needs and those new capabilities should also satisfy concerns in the line sharing environment with minimal additional business practices and coordination.

[76] The concept raised by Bell Atlantic of the DSLAM "retraining" is an example of this. Residential users enjoying low-cost, shared line DSL will be advised that periodic line testing will cause their DSL to "retrain" and that service may, for those minutes, be interrupted.

easily be accommodated after line sharing is ordered.

d) OSS Modifications Should Be Implemented In A Manner That Delivers the Benefits of Line Sharing Quickly To Consumers

Robust and scalable operations support systems (OSS) are crucial to the success of competition for advanced services. Incumbents and competitors are working within industry forums to develop interoperable, efficient OSS for the full range of competitive services, including DSL. To read the opening comments of the incumbent LECs, however, one might be left with the impression that two-carrier line sharing could never be accommodated through these existing efforts.[77] Carriers' concerns are overstated and, like many of their concerns discussed above, do not specifically implicate two-carrier line sharing, but instead, are issues that any carrier offering its own shared voice and data product would have to address.

The incumbent LECs' inconsistency and general lack of credibility in opposition to line sharing make it difficult to truly discern the impact of two-carrier line sharing, if any, on OSS implementation. SBC estimates that the cost of upgrading OSS could be "hundreds of millions of dollars" and take two years.[78] GTE, on the other hand, estimates a total of $5 million dollars.[79] Bell Atlantic suggests OSS updates "presumably can be

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[77] Comments of SBC at 21; Comments of GTE at 28-29; Comments of Bell Atlantic, Jackson Statement at ¶ 14; Comments of BellSouth at 22-23.

[78] Comments of SBC at 21.

[79] Comments of GTE at 28-29.

developed" but the time and cost is unknown.[80] BellSouth suggests that the time and cost for OSS upgrades cannot even be identified until standards are developed.[81] In the merger conditions proposed by Ameritech and SBC, however, the two companies propose to implement line sharing for competitive LECs within 3-12 months and for their own affiliates immediately – suggesting that such OSS and operational issues can quickly be surmounted.[82]

Many of the carriers' comments about OSS do not relate specifically to two-carrier line sharing, but instead to the steps that will have to be undertaken to implement any shared voice and data product. BellSouth, for example, suggests that the "new" OSS would have to "handle a combination of POTS services and special services circuits" and would have to include the inventory of all copper loops owned by BellSouth.[83] Presumably, however, for BellSouth to have a robust retail voice and data product of its own, it will have to build an OSS to handle POTS and special circuit orders just as it would if a competitive LEC was offering the DSL.

While it may be true that two-carrier line sharing will require additional capabilities in both incumbent LEC and competitive LEC OSS, this issue should not be used to thwart competition for this product. Just as the development of OSS systems to

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[80] Comments of Bell Atlantic, Jackson Statement ¶ 14.

[81] Comments of BellSouth at 23.

[82] SBC/Ameritech Proposed Merger Conditions in CC Docket No. 98-141, at ¶ 33.

[83] *Id.*